

#### ABSTRACT OF THE DISCLOSURE

A laser device, comprising a laser beam emitter having an optical resonator, wherein the optical resonator has a resonator and a reflection mirror, and at least one of a length of the resonator or a curvature of the reflection mirror is determined so as to satisfy condition that a parameter  $M^2$  of beam quality of a projected laser beam is within a range of  $8 \leq M^2 \leq 22$ , where  $M^2 = \pi w \cdot \Theta / \lambda$  ( $w$  is a beam waist of a laser beam;  $\Theta$  is a spreading angle; and  $\lambda$  is a wavelength of the laser beam).